

# **Final Report**

## **Health Risk Appraisals in Primary Care: Current Knowledge and Potential Applications To Improve Preventive Services and Chronic Care**

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**July 13, 2009**

**ECONOMETRICA, INC.**

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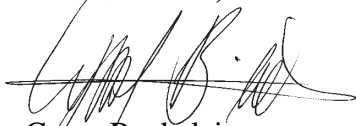
Dear Ms. Kendrick:

Econometrica is pleased to submit the Final Report on this task order to the Agency for Healthcare Research and Quality (AHRQ). We are transmitting both electronic and hard copies.

We enjoyed working with you on this important project. If you wish to discuss any aspect of this submission, please feel free to contact me at (301) 657-8311 or Valerie Nelkin at (301) 935-5688.

Sincerely,

**Econometrica, Inc.**



Cyrus Baghelai  
President/CEO

cc: Janice Geneviro  
Contract File

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## Executive Summary

**Project Objective:** to inform AHRQ planning and decision-making related to the use of Health Risk Appraisal (HA) information in primary care settings.

**Methods:** environmental scan including a literature review and interviews with nine key informants, plus an expert panel meeting.

### Results by Research Question

**How are HAs currently being used in primary care settings?** Information on this topic is limited. A 2001 survey reported that more than 20 percent of large medical groups and IPAs used HAs and provided the results to the patient's physician. The Expert Panel, however, was skeptical of these results.

**How might HAs be used more effectively to improve the delivery of preventive services in primary care settings?** Understanding and intervening in lifestyle factors is critical to health promotion. Effective HA use requires physician links to capable providers of preventive follow-up services and may work best if para-professionals review HA findings with patients. Widespread HA adoption in primary care is unlikely without standardized HA instruments and risk scoring and protocols to elicit high completion rates and guide follow-up referral. HA integration into electronic health records (EHR) or the Medical Home seems desirable.

**How is information derived from the use of HAs in other settings, such as worksite health promotion programs shared with primary care providers?** HAs are widely used by health plans and employers. Confidentiality issues, data ownership, and patient uncertainty about primary care provider identity impose formidable barriers to sharing. Even without those barriers, current HA data vary so much in content, format and scoring that busy clinicians could not readily use them.

**How are HAs being used (in any setting) to provide care to individuals that integrates preventive services and care management for chronic conditions?** HA use with chronically ill patients, especially ones with multiple diseases, is uncharted territory except in two nascent Centers for Medicare and Medicaid Services (CMS) demonstrations on HA use in primary care with people over age 65. AHRQ should consider working with CMS to assure the data elements AHRQ needs are being captured.

**What strategies might improve the delivery and coordination of clinical preventive services when HAs are used, regardless of setting?** The National Committee for Quality Assurance (NCQA) is working to document, evaluate, and increase the quality and consistency of HA practice, an effort that AHRQ may wish to join. Major system redesign based on a team approach, would be necessary to coordinate preventive care and follow-up services in primary care. Self-care management and the effect of cultural factors and work environment on HA completion rates also merit exploration.

**What knowledge and evidence gaps exist regarding the use of HAs?** Studies recommended included analyses of: best practices; linkages between the clinical and community setting; HA effects on costs of care, patient functioning, and productivity; HA design (e.g., coverage, reading

level, risk scoring); and risk behavior in racial and ethnic populations and people with chronic conditions.

**Other Recommendations to AHRQ.** Programmatic needs include developing demographically tailored HA instruments, risk scoring, and practice guidelines tailored to primary care and documenting best practices in HA use in primary care. The potential role of Health IT and EHRs in HA standardization and use needs further study. AHRQ also should consider (1) collaborating with CMS, DOD, VA or the private sector to demonstrate the value of linking HAs into primary care and (2) monitoring or participating in NCQA's efforts. A more probing survey of HA use in large practices and an initial survey of smaller practices are needed to determine how often they use HAs and how they integrate the results into primary care. Another desirable study would analyze claims and HA data from large users of HAs in primary care to determine how often primary care providers deliver or refer patients to preventive follow-up in response to different risks (e.g., do reports of balance problems or falls elicit greater referral than reports of memory lapses?).

## **Introduction:**

# **The Use of Health Risk Appraisals in Primary Care**

### **Purpose**

“Motivating and maintaining health behavior change is critical to improving the nation’s health and controlling health care costs. Health behavior research has shown that helping people identify risks to their health can facilitate the process of healthy change. This is the goal of many Health Risk Appraisals (HAs). Some HAs go beyond simple assessment and target key risks for change” (Mayo Foundation for Medical Education and Research, 2009).

Most HA use thus far has been in workplace settings. The Agency for Healthcare Research and Quality (AHRQ) is interested in understanding the use of HA information in patient care. A one year task order project to study this issue was awarded in July 2008 to Econometrica, Inc. and PIRE. This project is intended to inform the ongoing planning and decisionmaking process for research and programming at AHRQ.

This final report incorporates the findings of the two major tasks of the study, an environmental scan and an Expert Panel meeting. The purpose of the scan was to review the current level of knowledge about the use of HAs in primary and chronic care settings and the effects of HA use on care delivery and health outcomes. The purpose of the Panel meeting was to bring together experts in the field to discuss the key research questions, review the scan results, inform the work of the U.S. Preventive Services Task Force (USPSTF), and recommend future directions for AHRQ research activities.

The study topics included in this report are:

- How HAs are currently being used in primary care settings.
- How HAs might be used more effectively to improve the delivery of preventive services in primary care settings.
- How information derived from the use of HAs in other settings, such as worksite health promotion programs is, or is not, shared with primary care providers.
- How HAs are being used (in any setting) to provide care to individuals that integrates preventive services and care management for chronic conditions.
- Strategies that might improve the delivery and coordination of clinical preventive services when HAs are used, regardless of setting.
- Gaps in knowledge and evidence regarding the use of HAs, and how HAs affect the delivery of effective preventive and care management services.

This report presents overall findings, highlights gaps in research and practice, and identifies next steps for AHRQ.

## Organization of this Report

The methodology used for key project tasks is presented, followed by findings organized by the six research topics. The order by topic is:

- Key Research Topic
- Environmental Scan Summary
- Expert Panel Meeting Summary
- Conclusions

An overall analysis and summary follows the topic summaries. The report ends with conclusions and recommendations to AHRQ.

Lists of references and literature reviewed are appended to the report.



## Methodology

### Environmental Scan Methodology

Relevant literature and other materials were identified by the study team. Some documents were obtained from AHRQ and personal contacts. Many came from EBSCOhost or other online sources. Others are from the National Library of Medicine, Johns Hopkins library, and interlibrary sources. Information was extracted with proper bibliographic reference, sorted by topic, and then synthesized.

The relevance of international literature was discussed with AHRQ. While some non-English-language material might be acceptable, the difference in health care systems would be problematic. AHRQ therefore recommended that these resources be included on a case-by-case basis. Research conducted in the United States was the principal focus.

### Inclusion and Exclusion

Strategies that were implemented to identify relevant information include:

- Held discussions with AHRQ officials to identify pertinent studies already known to AHRQ.
- Conducted Internet journal searches through BiomedCentral and through EBSCOhost Health-Related Journals, with simultaneous search of MEDLINE, Biomedical Reference Collection: Corporate; Electronic Journal Service E-Journals; Nursing and Allied Health Collection: Comprehensive; PsychINFO, Psychology and Behavioral Sciences Collection; PsycARTICLES; and SocIndex. Essentially the same search terms were used with each search engine, using Boolean search algorithms as follows: (health risk appraisal\*) NOT (test OR tests OR testing OR questionnaire\* OR research instrument\*) AND (utilization OR visit\*) AND (longterm care OR long term care OR chronic care OR primary prevention OR preventive medicine OR preventive services) AND (health status indicators OR health risk appraisal\* OR visit\* OR utilization OR primary OR physician\*) AND ((research instrument\* OR questionnaire\* OR test OR tests OR testing) AND (hra OR health risk appraisal\*)).
- Scanned abstracts to determine relevant articles before retrieving full text.
- Conducted Internet searches with Google, Google Scholar, and Scirus of non-journal literature (unpublished reports, dissertations, etc.). These searches used the Booleans from the journal abstract search or more specific terms geared to finding ancillary materials related to published articles or materials identified through networking.
- Hand-searched the reference lists of relevant items.

## Key Informant Interviews

Telephone discussions were conducted with nine key informants identified by AHRQ, the study team, the literature, and networking with colleagues. The interviewees were selected in consultation with AHRQ.

## List of Key Informants

- Bruce Bagley (American Academy of Family Physicians)
- Ron Goetzel (Thomson Reuters and Emory University)
- David Grossman (Group Health Cooperative and U.S. Preventive Services Task Force)
- Robert Harmon (Florida County Health Department)
- James Mold (Family and Preventive Medicine, University of Oklahoma)
- Zsolt Nagykaladi (University of Oklahoma)
- Nico Pronk (Health Behavior Group, HealthPartners)
- Phil Renner (National Committee for Quality Assurance)
- Robin Soler (Centers for Disease Control and Prevention)

An open-ended discussion guide was approved by AHRQ. Questions were sent to respondents before the interviews to help them prepare and the interviews lasted up to 1 hour each.

## Expert Panel Meeting

An expert panel was recruited to further inform the study. The panel met for a full day at AHRQ on March 11, 2009. The panel received the environmental scan report prior to the meeting. Two people took detailed notes at the panel meeting and the proceedings were taped.

Panel members included:

- David Anderson, Ph.D., LP (Senior Vice President & Chief Health Officer, Staywell Health Management, St. Paul, MN)
- Ron Goetzel, Ph.D. (Vice President, Consulting & Applied Research, Thomson Reuters, Washington, DC, and Research Professor & Director, Institute for Health and Productivity Studies, Rollins School of Public Health, Emory University)
- David Grossman, MD, MPH (Medical Director, Preventive Care, Group Health Cooperative, Seattle, WA and U.S. Preventive Services Task Force)
- Linda Kinsinger, MD, MPH (Chief Consultant for Preventive Care Services, VA National Center for Health Promotion and Disease Prevention, Durham, NC)
- Michael Lefevre, MD (Professor, Family and Community Medicine, University of Missouri – Columbia and U.S. Preventive Services Task Force)
- Zsolt Nagykaladi, Ph.D. (Assistant Professor of Research, University of Oklahoma Health Sciences Center)
- Nico Pronk, Ph.D., FACSM (Vice President & Health Science Officer, Journeywell, and Senior Research Investigator, HealthPartners Research Foundation, Minneapolis, MN)
- Tricia Trinite, MSPH, ANP-BC (Prevention Dissemination & Implementation, AHRQ)

## Findings by Research Topic

This section is organized around the six study topics. Under each topic, a summary of the environmental scan including the key informant interviews is presented, followed by a summary of the Expert Panel meeting. Conclusions by topic follow these summaries.

### TOPIC 1: How HAs are currently being used in primary care settings

#### Scan Summary

Between September 2000 and September 2001, the National Study of Physician Organizations and the Management of Chronic Illness used a telephone survey to measure organizational characteristics, care management processes, and health promotion practices of 1,104 of the 1,587 U.S. medical groups and independent practice associations (IPAs) with 20 or more physicians (a 70-percent response rate). The mean respondent had 71 clinic sites and 219 physicians. Thus, the study encompasses the practices of groups containing more than 220,000 physicians (including some who are part of multiple groups)—more than 25 percent of all physicians practicing in 2000. The survey asked “Does your group routinely administer a health risk assessment (HRA) protocol or questionnaire to identify patients who may benefit from counseling or other interventions to reduce their risk factors (do not include health history questionnaires)?” Of responding groups, 22.5 percent reported that they routinely administer HAs (Halpin et al., 2005). *No information on HA content or format was collected.*

Logistic regression revealed that a significantly larger percentage of medical groups than IPAs reported administering HAs (26.2 percent vs. 15.0 percent), and the odds of use increased as the number of physicians in the group increased. Multispecialty practices were less likely to use HAs, but this finding was marginally significant. Controlling for these factors, the odds of routine HA use were greater in organizations with external quality incentives and information technology capabilities. Practice age and ownership were not significantly associated with routine HA use. The report cautioned that these findings are correlational and may not imply causation.

Among the large groups using HAs, 88 percent stated they “give the questionnaire results to the patient’s physician,” and 52 percent stated they “use the results in a formal, organized process for contacting patients who are considered to be at risk” *Meeting participants were extremely skeptical of these findings, which did not match their experience.*

The report also stated that little else is known about routine U.S. physician use of HAs. Consistent with that view, the present review located no survey or population-based information on HA use among smaller practices. Halpin et al. speculate that “smaller organizations have a lesser capacity to administer HAs and are less likely to use them.” (Halpin et al., 2005)

Beery and Greenwald (1996) suggested that in 1995 HAs largely were designed for people aged 18 to 64. For patients over age 75 they believed additional risks needed to be probed, patients were not greatly influenced by scores showing their probable remaining lifespan and ways to

extend it, and written feedback was undesirable. More recently, Rubinstein et al. (2003) identified three HAs for the elderly that had been used in physician office settings but provided no information on how extensively they have been used. They described the HAs as follows:

- HRA – Elderly. Developed by John Beck, Lester Breslow, and colleagues at UCLA. Items in the questionnaire cover ... comprehensive ... content ... relevant to health promotion in the elderly. Reports are generated for participants and their physicians. The instrument was tested ... in senior centers, in a medical practice, and in random community samples.
- Interactive Multimedia HRA. Produced by the Oregon Center for Applied Science, Eugene, Oregon. This tool employs a kiosk system intended for use in medical facilities and senior centers. Based on touch-screen responses, the system creates a report designed to encourage specific behavior change in older adults.
- YOU FIRST Senior Health Assessment. Available from Greenstone Healthcare Solutions, Kalamazoo, Michigan. Detailed reports aid in increasing the speed with which the primary care provider identifies and acts on clients requiring care and targeted interventions. It includes a 15-item “readiness to change” scale.

The literature details a few project-specific protocols for HA use by physicians (Beery & Greenwald, 1996, Scariati & Williams, 2007, Levenkron, 1988, Greenwood, Ellis, & Gross, 1991, Stuck et al., 2007). The settings described include Group Health Cooperative of Puget Sound, a free rural clinic in Southwest VA, a general medical ambulatory clinic in Rochester NY, a small private practice in Minnesota, and a large randomized trial of an HA for the elderly in London, Hamburg, and Solothurn, Switzerland. Greenwood et al. (1991) found no comprehension differences between mail and nurse feedback; in contrast, Scariati & Williams (2007) found personal contact was superior. Harari et al. (2008) found minimal changes in health behavior or preventive services uptake in the 2,006-person London arm of the multi-national trial, where HAs were integrated into the electronic medical record, generating physician reminders as well as written feedback to participants.

An Austrian study (Eichler et al., 2007) assessed how often physicians who administered HAs to patients over age 70 followed up on risks identified. The likelihood of follow-up was 100 percent for hearing impairment, 93 percent for mobility/falls, 83 percent for depression, 65 percent for urinary incontinence, and only 18 percent for cognitive impairment.

## Meeting Summary

Participants discussed the scope and use of HAs. They agreed successful use of HAs in primary care requires linkage within the physician practice and between the practice and preventive service providers so that relevant information reaches the physician, is included in the patient’s medical record, and stimulates prompt and appropriate follow-up. Efficient linkage to appropriate preventive follow-up care is a major challenge. Developing and promoting HA standards and protocols for follow-up referral could be very helpful.

Nevertheless, the challenges in implementing this approach can be formidable. A panelist reported that the Health Partners HRA generates a one-page clinic report for the patient to give the clinician as well as an individual feedback report. The clinic report also goes into the EMR,

but the primary care provider has no reason to pick it up, has no prompt, is not trained for it, has no system to support it, and gets no reimbursement for reviewing and acting upon it. So the HA is disconnected from a systems perspective. Another panelist stated that physician discomfort with the unprecedented inclusion of patient-entered data in the EMR accentuates the problem

Several potentially effective models for integrating HAs into primary care were discussed, including work place, primary care office, and independent/stand alone administration. HAs have been effectively used for more than 30 years in work sites and participation rates are rising. At many large companies, the benefit plan design and premium are linked to the participation rate, and 90 percent participation has become common. Linkage of HAs administered by employers or their health plans into primary care are discussed under topic 3. Stand-alone HA interventions such as Revolution Health and Health Vault have an independent method of collecting data and transferring it to physicians. Finally, in the clinician's office waiting room, patients often have time to complete health histories and assessments including HAs that can be integrated into the primary care visit.

Physicians lack both the time and training to provide the preventive follow-up that may be identified when assessing results from an HA. A community of resources and specialists that require referrals are often required.. One method, therefore, would be PCP referral to community providers with a brief physician follow-up 3-4 months later. Another effective delivery system may be contracting out HA counseling, referral, and follow-up to assure compliance.

Participants pointed out that many physicians have little experience changing health risk behaviors (e.g., through smoking cessation, weight loss, stress management) and that they should focus on a few key areas that they can address. One suggestion was to limit HA questions to those behaviors that can result in death and which have valid measurements; i.e., smoking, alcohol abuse, poor nutrition, and lack of physical activity.

## Conclusions

Halpin et al. (2005) found that 22.5 percent of large medical groups and IPAs routinely used HAs in 2000, with findings typically reported to the primary care physician. The panel was skeptical of these findings and suggested linkage and possibly even usage was more likely to be sporadic than routine. A more probing repeat survey and a survey of a sample of smaller practices seem desirable. These surveys also should investigate the content, format, and scoring of HAs used in primary care and the guidance/training that primary care providers receive about interpreting and acting on the HA information they are provided.

The review did not find any publicly available practice guidelines or standards of care for primary care physicians to follow regarding the administration of HAs, ways to process or evaluate HA data, or follow-up steps to take with patients who have completed an HA. Panel participants agreed that physicians have little experience with high risk behavior change and recommended developing standards for HAs and their use in primary care settings. Halpin et al. (2005) also suggest that facilitating information technology (IT) use related to HAs might accelerate use in primary care.

Other than one Austrian study (Eichler et al., 2007), minimal information was found on the care provided as a result of HA responses. Replicating that study at large U.S. IPAs or medical groups that use HAs seems desirable and may be completed with claims data.

## **TOPIC 2: How HAs might be used more effectively to improve the delivery of preventive services in primary care settings**

### **Scan Summary**

A recent review concluded “Interventions that combine HRA feedback with the provision of health promotion programs are the interventions most likely to show beneficial effects. HRA questionnaires must be coupled with follow-up interventions (e.g., information, support and referrals) to be effective. The HRA questionnaire alone or with one-time feedback is not an effective health promotion strategy” (Rubinstein et al., 2003). The interview respondents echoed these conclusions, stating that HAs alone do not produce many beneficial results. With appropriate follow-up, they believed HAs would be cost-effective in primary care settings and could offer a sound return on investment, reduced medical costs, and improved productivity.

Pronk (2005) addresses how physicians should approach treating modifiable risk factors, and suggests using the 5 As, a method that has been used to address tobacco use and smoking in the primary care setting. With the 5 As method, providers assess, advise, agree, assist, and arrange for follow-up. The primary care physician plays a role in collecting risk assessment data and providing goal-oriented counseling and follow-up.

For follow-up, it is suggested that clinic personnel, including nursing staff and physicians, stay connected with the behavior change staff using interactive technology such as a secure Web site, telephone, and fax. With consent, Web sites can give physicians and their nursing teams access to data on individual patients. At the time of the next visit, the patient’s records can be reviewed and advice can be tailored to progress in the treatment program. The Health Partners Health Behavior Group used this approach in their weight control program (Pronk, 2005).

Most physicians need to be convinced to use HAs in the clinical care setting (B. Bagley). Many family practice doctors, for example, assume that they already are catching most risk factors in their practices (e.g., blood pressure, sugar level, cholesterol, and smoking) and need to be shown the gaps in what they are collecting. To persuade clinicians to use HAs more widely in routine practice, convincing research needs to show that critical items are not being addressed (B. Bagley).

One interviewee aptly summed up HA potential (R. Harmon). It is likely that HAs can strongly influence the delivery of health care services, especially if they become part of the EHR, but this does not happen often. The HA combined with the health record would be shared with the patient and the clinician. An important focus would be on preventive services, which could affect outcomes in an integrated system. Outcomes also might improve with an annual assessment of the status of risk factors, progress made, and clinical services needed. Integrating HAs/IT with the process of care (such as kiosk computers in clinics) could help improve patient-provider

communication, services coordination, and quality of care. Rubinstein et al. (2003) provide a more detailed vision of the potential roles of technology in HA administration and follow-up.

### ***Strengths of Using HAs in Primary Care***

According to many key informants, use of HAs with supporting systems in place can produce good outcomes. Specific strengths of HAs used in primary care include:

- Ideal HAs are systematic, standardized, and user friendly. They engage patients at the point of entry and can be administered to large numbers of healthy people.
- HAs are preventive screening tools. They provide a method of identifying health problems and risks, especially psychosocial ones.
- HAs are oriented around behavior change and capture information most medically oriented history forms do not. HAs can link health history with outcomes as they process information, and capture health outcomes. They are developed to be actionable and result in follow-up.
- HAs can facilitate the relationship between patient and provider, empowering and preparing patients. They can connect the right people with the right services and create a “teachable moment” with the patient.
- HAs provide meaningful feedback to patients and help motivate them to change behavior. At the same time, they allow clinicians to target interventions and programs to be more cost effective.
- HAs are predictive of outcomes and health status. It is hard for clinicians to focus on prevention without data; with HAs, they can see the progress they are making.

Additionally, the better HA tools allow clinicians to prioritize several interventions (J. Mold). Otherwise, physicians follow disease-oriented guidelines, which are often too long lists of actions. HAs can make the experience more person-centered, with goal-oriented recommendations by converting long lists of possible interventions and tailoring them to the person.

### ***Increasing Response Rates***

Response rates for HAs vary. In the workforce setting, meaningful incentives are a key participation driver, experts say. “If we offer a health risk appraisal with no incentive, even if it’s communicated well, on average we’ll see only 15 to 20 percent participation,” according to David Anderson of Staywell. “Offering even a small incentive raises that rate to more than 50 percent. Some companies get virtually 100 percent participation” (Aase, 2006).

Response rates in primary care settings also generally increase with the use of incentives (R. Goetzel, others). In general, the better the incentive, the better the participation (R. Harmon, N. Pronk). Examples of patient incentives to complete HAs are co-pay reduction or waiver; reduced deductible; completing the HA as a condition of coverage; paying \$100 for participation; a \$25 gift card (a weaker incentive); or T-shirts or trinkets (also weaker incentives).

More provider-oriented approaches to increasing response rates include a request from the primary care physician to the patient to complete the HA; organizational support; improved

communication within the setting; and better understanding of the clinical setting, such as promoting programs that support the bottom line (D. Grossman). Physician requests resulted in the highest completion rate at Group Health Cooperative.

Respondents also indicated response rates are sensitive to mode of administration. HAs may be administered through personal interview, telephone interview, paper-and-pencil tools (on-site completion/submission), or online. Computerized forms offer several advantages. They are more anonymous, and thus people often are willing to disclose more. The skip patterns, which can be quite complex and confusing on paper, are automatically calculated for the respondent. Disadvantages of online administration are that some patients lack access to computers and some lack computer skills and need assistance to use an automated form. Some medical offices and clinics have set up kiosks with computers so patients can complete HAs before their appointments. Multiple respondents stated that health care or administrative staff members may be available to assist with this process.

### ***Doctors Are Busy and May Lack the Time and Resources to Use HAs***

Pronk (2005) states that busy clinic schedules, limited time for a physician to spend with the patient, the issue of financial reimbursement, and other factors result in missed opportunities to talk to patients about taking action on their modifiable adverse health risks. Kottke, Edwards, & Hagen (1999) consider it unlikely that physicians will ever have more time to devote to counseling for health behaviors due to the high cost of physician time and the time pressures under which they do their work.

Pronk (2005) discusses the significance of the physician's role in the primary care setting and how the physician can set the tone for a fluid transfer of patient information (intake, measurements, HAs). In a typical, busy clinic schedule, the physician has approximately one minute available to address prevention-related topics; thus, a referral to another member of the extended care team should be made to do the 5-A "assist" and "arrange" for follow-up.

### ***Other Barriers to Using HAs in Primary Care***

HAs have not been used a great deal in primary care settings for varied reasons, listed below. Some barriers were cited by one interviewee, as noted; the remainder were cited by many or nearly all respondents.

- Physicians commonly use a medically oriented history form, which does not focus on health behavior changes (P. Renner). It can be difficult to incorporate traditional HAs into clinical care; e.g., most insurance companies do not pay for a wellness visit (Z. Nagykaldi).
- Few links exist between health promoters and primary providers. The HA is too much of a stand-alone tool; it is not used enough as an integrated tool with the health care system (R. Soler). Effective HA use requires integrating the HA with follow-up programs, but few systems have a feedback loop. The primary care setting lacks a mechanism to show that a particular problem has been addressed.
- Physicians do not always know what to do with HA results (P. Renner). Many physicians are not trained in health behavior change or do not often prescribe health education and health



promotion (B. Bagley). Although clinicians need to be able to respond to HA output, HAs typically are not designed to guide their response.

- The ultimate goal is to motivate the patient, but changing health behavior is very difficult to accomplish (P. Renner, Z. Nagykaldi). Patient readiness to change, thus, is a key factor in the success of the HA process.
- HAs lack standardization—the tools vary widely in length (R. Goetzel) and in topical coverage. Patient burden becomes an issue with the longer HAs and the need for duplication when sharing information. Electronic forms can be costly and complex tools.
- HAs provide a self-report restricted to one moment in time. Repeat HAs to track outcomes generally have low response rates.

## Meeting Summary

Participants discussed what might enhance HA effectiveness. They debated if HA questions should focus only on areas with evidence-based interventions. Some Panel members said not to make the HA intervention-based because all risk factors are modifiable, and it is important to ask a broad set of questions to understand what is possible. HAs lack enough clinical detail to inform timely primary care action, especially if staff and other resources in the care setting is limited. Also, current interventions may not be very effective, but that does not mean effective ones could not be developed in the future. One panelist therefore advocated increasing the range of topics that HAs cover and the depth of coverage. Others thought, instead, that with limited time, the need is to focus on interventions that are evidence-based and can be addressed effectively now. One said if the HA is limited to risks with proven interventions, it would be possible to design a 10-20 question tool, a very practical length. In primary care settings, this individual recommended a narrow HA focus, while HAs in work place or insurer settings could be much broader.

One study showed that HA questions about significant health impacts worked well. Conversely, some participants thought that patient-specific performance measures were premature, that “we’re not there yet.”

The lack of physician time for HAs, pointed out in the scan, also was discussed. Many primary care physicians never look at HAs, even if they have easy access to them. Providers often are uncomfortable addressing certain risk factors when they are not trained for it and have no supports for follow-up. The clinician needs to be involved in deciding appropriate parameters, and guidelines should be developed and incorporated into HAs or electronic tools, or both. The panel reiterated the value of the “5A’s” model which recognizes that everything does not have to happen in the primary care setting.

## Conclusions

The critical challenges in tying HAs into primary care effectively relate to linking information identified in the primary care setting to follow-up services. Physicians often lack both the time and the training needed to coordinate effective preventive health services in follow-up to HA findings. Standards and protocols might help to address this issue. In large practices, specialist

staff might be hired or trained to handle preventive service coordination and delivery. This is a larger challenge for smaller practices.

Another question is the appropriate form and content for HAs used in primary care. Some feel that the ideal HA for primary care would focus on a small set of risky behaviors and suggest to the physician a prioritized report on what preventive care needs exist. A broader behavioral focus and outputs that include mortality or disease risk scores and related patient feedback, however, is the model with proven value in other settings. A meta-analysis on the effectiveness of risk communication in primary care (Edwards et al. 2000), while not focused on HAs, is relevant here. In general, it found risk communication by physicians changed patient decisions (treatment choice, screening uptake, or risk behavior) more when based on individual than population risk data.

Strategies to improve the delivery and coordination of health care services include HA use by providers based in work site clinics, the team approach to HA interpretation and follow-up at the primary care provider's office, systems redesign, addition of reimbursable CPT codes for HA administration and follow-up, and developing clear guidelines for the clinician and personalized wellness plans for the patient.

### **TOPIC 3: How information derived from the use of HAs in other settings, such as worksite health promotion programs, is, or is not, shared with primary care providers**

#### **Scan Summary**

While HAs are used extensively among employer and health plan/health promotion groups (e.g., 241 of 453 large employers surveyed (53 percent) use financial incentives to encourage HA participation, according to Watson Wyatt Worldwide, 2008), HIPAA-compliant and privacy-conscious employers will not have access to information from their employees' HAs or readily be able to share HA reports with employees' primary care providers. For example, the Milwaukee Public School System collective bargaining agreement mandates HA response but forbids the HA vendor from sharing or discussing individual responses with medical providers or anyone else other than the respondents (Milwaukee Board of School Directors & Milwaukee Teachers' Education Association, 2006). Similarly, HA forms often state that all information provided will be kept confidential.

One approach used to deal with information sharing, for example in a major Medicaid demonstration of HA use by the elderly (Centers for Medicare and Medicaid Services, 2007), is to seek informed consent to share HA findings with a physician designated by the participant. An unknown number of employers also encourage employees to share the HA findings with their physician. For example, Galveston, Texas, requires employees to complete an HA and suggests they take the HA report to their "own physician for review and discussion" or "discuss it with a physician at the Galveston County Government Employees Healthcare Center" (Galveston County Government Texas, n.d.).

Linkage to the primary care setting are sometimes built-in when a research project collects HA data, especially if the project involves follow-up counseling with selected HA completers. As part of participant protection (possibly to meet Institutional Review Board requirements) or intervention planning, the research protocol often requires the counselor to refer completers to primary care, if selected response patterns indicate failure to receive medical intervention could endanger the participant (e.g., Boudreau et al. 1995, Ozminkowski et al. 2006, Goetzel et al. 2008, Baker et al. 2008, Pronk et al. 2002). The referral may be made by computer or by a counselor who interacts with the patients as part of the research protocols. But little is known about this process or its consequences. Articles resulting from these research projects describe this protocol in one short sentence or phrase; the volume and outcomes of these referrals are not reported.

The interviews confirmed these findings. Few HAs link with health promotion agencies or primary providers (P. Renner). Indeed, employers and physicians rarely communicate with each other (B. Bagley). Although aggregate-level data often are shared with employers and customers/clients for tactical and strategic planning, they typically are not shared with the employer's health care provider network (N. Pronk).

HAs present myriad confidentiality issues. One expert stated HA data at the individual level are not shared, in part due to HIPAA (N. Pronk). Another was more optimistic, suggesting HIPAA and other confidentiality requirements slow things down, but do not make information sharing impossible (R. Harmon). HAs that ask for a person's Social Security number impose a major, avoidable deterrent to response (R. Goetzel) as some respondents worry that the information provided could be used against them.

Another impediment to sharing HA data with physicians is many individuals may not have a regular doctor, may have multiple doctors, or may be unable to contact their primary health care professional. Information is rarely shared unless the patient brings the HA results to the physician (R. Goetzel).

Interview respondents described two efforts by health plans to administer HAs and use the results to improve physician management of preventive services:

1. Group Health Cooperative developed an evidence-based, clinically credible HA that is evolving over time (D. Grossman). Guideline changes at the health plan trigger changes in the tool. The HA is used as preparation for a preventive-services visit is considered an "omnibus screening tool" and is integrated into clinical care.

The HA score and interpretation go into reports that are given to the patient and the doctor, who receives a condensed summary. For example, if the patient's risk level for alcohol use merits outreach and follow-up, the recommendation goes to the physician, who is expected to act on it. Very few of the health plan's clinicians do alcohol screening, so this information is important. Some answers to the screener result in feedback to the patient, for the clinical team report, for the medical record, or for a "red flag" e-mail to the medical team. Other follow-up is available, such as appointments with a Lifestyle Coach.

It was a long process to obtain “buy-in” and get clinicians involved. Physician feedback was incorporated into the design of the tool, consumer feedback was gathered via focus groups, and changes were made based on their advice. The tool is designed to minimize user burden and the average time spent completing the HA is 12 to 15 minutes. The large majority of users have computer access, but the medical center also offers an HA kiosk. The insurer is working on a “Proxy Access” with nurses and allied health professionals.

2. Health Partners Health Behavior Group in Minnesota connected their HA to the health care delivery system, but later discontinued the effort (N. Pronk). Issues that surfaced included liability concerns—patients had risks, but were not being followed up; and confidentiality—in sensitive cases, the legal department stopped the information from going anywhere. As part of the employer-sponsored program, data were being collected through the workplace, but physicians had no chance to follow up. Patients were not being seen in primary care settings. The employer did not see these data.

In this example, the health insurer ended the arrangement and is debating how to integrate the HA with primary care. Some approaches include: asking insured persons if they want their HA data sent to their physicians (obtaining permission), or telling them to bring the HA with them to their next physician visit. HA data at the individual level are not normally shared due to HIPAA regulations. However, data at the aggregate level often are shared with employers and insurers to be used for tactical and strategic planning.

Rubinstein et al. (2003) report that in the 1980s, five Consolidated Omnibus Budget Reconciliation Act (COBRA) Medicare Prevention Demonstrations and a sixth related demonstration program all included an HA component, but the HA’s role “as a health promotion tool was overlooked inadvertently” in evaluating the demonstrations. The HAs were health plan initiatives. “Some projects provided the HRA information to participants’ physicians or trained nurses without assessing whether the providers actually discussed the HRA with the participants.”

The COBRA demonstration at Johns Hopkins University (German et al., 1995; Burton et al., 1995) used a model oriented to primary care linkage. Rubinstein et al. (2003) describe that program and its outcomes. Participants “received an explanatory letter and voucher for a visit without charge to their primary caregiver in Year 1 and Year 2. Physicians were asked to review health risks; provide counseling where appropriate; take a complete medical history; and include breast, pelvic and rectal exams in the physical exam. Lab tests and immunizations were also provided. After two years, the intervention group did not significantly differ from the control group on smoking, problem drinking, or sedentary lifestyle. However, the health of participants in the intervention group declined less compared to the control group, as measured by the Quality of Well-Being Scale. This difference was mostly due to a differential death rate between groups.” Unfortunately, the impact of HA use in this demonstration was not evaluated.

## Meeting Summary

The Panel discussed roles, linkages, and methods of integration. Discussion focused on measurable risks, standardization, and “closing the loop.” One member pointed out that “we know much more than we did five years ago.” Some said to “try different theories out and see which work.” Another suggested not getting into the micro level, that “change happens at the macro level,” and recommended looking at what works best. Working with current models and comparing them using Thomson Reuters and other large data sets could be a good beginning. Several participants urged “mining existing data” and looking for practice based research.

## Information Sharing

Transfer of HA information from other settings to primary care providers presents a number of challenges, including lack of standards, practicality, ownership, and confidentiality.

*Standards* – No standards have been developed, and each HA is its own entity, and is administered and interpreted differently. Current HAs vary widely, from tools identifying basic medical markers to much more sophisticated versions. They can be patient-centered, clinician-centered, or some combination of the two. Some have no face validity, while others have a strong scientific base. The Panel agreed that it is imperative to create standards and have defined fields. Additional study should focus on identifying core HA questions, assessing whether a standard HA instrument could work across primary care settings, and developing consistent, age-appropriate scoring of HA responses.

*Practicality* – Some panelists said that practicality was a bigger issue than confidentiality in sharing information from HAs. In order to effectively share this data, individuals would have to fill out detailed information about their providers, include all current contact information, and would need to specify which of many physicians should receive it. Many patients cannot identify their primary care provider, or do not have one. Employer health plans may know who gets care where, but that does not guarantee that the information can or will be shared due to privacy issues and the logistics of contacting individual practices. For example, providers’ billing addresses may differ from their office addresses or a health plan may only have access to a P.O. boxes.

*Ownership of the information* – *What information should be sent? Who should send the information to the provider? How can confidential information be protected?* Consistent with the scan results, patients do not want everyone seeing their medical information, especially since HAs may identify high risk lifestyles or become a liability for employment. One potential solution is to have the patient be the conduit of the information, which also could solve many of the HIPPA concerns. The challenge is getting the patient to accept this role.

The medical record itself is undergoing changes, and becoming more publicly viewable than a written record. Some are linking information across all units of care, so all medical staff can read it. Hopefully, this will increase transparency and facilitate sharing.

Both key informants and Panel meeting attendees discussed the role of the Medical Home, which has evolved since its introduction by the American Academy of Pediatrics in 1967. The basic premise is continual care that is managed and coordinated by a personal physician with the right

tools will lead to better health outcomes. The Medical Home could serve as the focal point through which all patients receive their preventive, acute, and chronic medical services. This approach assumes that patient-centered care will result in a basic shift in the relationship between patients and their primary care physicians. It requires a greater degree of personalized care coordination, access beyond acute care, and identification of key medical and community resources to meet the patients' needs. Additionally, the widespread use of information technology for care management and improved quality of care is critical. This model shifts from acute care to continuous comprehensive care and services.

The Medical Home can help standardize and promote best practices. Many participants believe that developing the Medical Home is a prerequisite for transfer of medical information, including health appraisal data from other settings to the primary care setting. Some said the health care system itself needs to be re-designed, that "we can't just shove HAs into the system we have now."

### **Priorities for Moving Ahead**

First, the roles of all players must be defined. This includes the patients and their families, interpreters as needed, primary care physicians, nurses, community providers and organizations, employers, schools, vendors, government, insurers, and the research community. Second, prototypes that have been used should be identified and assessed for organization, accessibility, efficiency, and clinical and financial outcomes. Third, new models need to be developed and tested in real world settings.

### **Conclusions**

The need to keep personal information confidential hampers information transfer from employer programs to primary care providers. Ongoing programs and randomized trials that incorporate strategies like informed consent or counseling to facilitate transfer, at a minimum should document the yield from these strategies and the use that primary care physicians make of the HA information. Other barriers include the lack of HA standards and common elements and access to provider identification.

*What does it take to achieve behavior change?* Evidence supporting HAs as interventions from the scan, the key informant interviews, and the Panel participants emphasizes that HAs alone do not change risk factors and that HA linkage/follow-up is required to achieve desired health outcomes. The HA is "an opportunity, but not the end point." Trust is the essential element in a one-to-two minute health promotion intervention prompted by HA findings. The HA information needs to go to someone the patient trusts, but many lack that kind of provider relationship.

*Is there value in pursuing more knowledge in this area?* Yes, participants definitely believed that it would be worth studying these issues further, even with significant barriers. The environmental scan and the meeting discussion emphasized how little integration is occurring, and the need to explore how to make integration happen. One participant remarked that linkage of HAs from the workplace or community setting to the clinical setting is very promising. Administering them in the work place with supportive behavior change is also quite promising. Another related that CMS is testing a model that connects vendor-administered HAs to clinical care. Few people, however, have looked into creating an effective system.

Undisclosed proprietary scoring algorithms impose a further barrier to primary care use of HA risk scores. Before acting on scores, many providers will expect to know the underlying science. It also is unclear how well the scores measure disease or mortality risk, which is a question AHRQ is uniquely well-positioned to pursue.

## **TOPIC 4: How HAs are being used (in any setting) to provide care to individuals that integrates preventive services and care management for chronic conditions**

### **Scan Summary**

Minimal information was available on HAs and chronic care. In a 2003 review, the RAND Corporation concluded “With the exception of studies involving older adults,” the literature “provided limited evidence on which to evaluate the effectiveness of HRAs in vulnerable populations” (Rubinstein et al., 2003).

Yet the potential is recognized. An Institute of Medicine report entitled *Promoting Health: Intervention Strategies from Social and Behavioral Research* (Smedley et al., 1999) suggests that substantially improving prevention and management of chronic conditions requires integrating social, public health, and medical approaches. Rubinstein et al. (2003) conclude that “HRAs coupled with health promotion programs have the opportunity to be an important part of such integration, by identifying risks to health, providing recommendations tailored to an individual’s specific medical and cultural context, and linking this with information on resources available within the community, such as senior centers.” The interview respondents suggested focusing on care management services in HAs for people at high risk of chronic illnesses such as diabetes and heart disease.

A CMS (2007) demonstration program, based in part on the RAND report, may point the way. The 3-year demonstration started in 2008 at five Medicare providers: Health Dialog Services Corporation, Focused Health Solutions, Health Partners Health Behavior Group, Pfizer Health Solutions Inc., and StayWell Health Management. The demonstration excludes institutionalized and managed care patients. Each provider is linking with two Department of Health and Human Services’ Aging and Disability Resource Centers and will deliver HAs and tailored feedback reports to 17,000 elderly plan members. Meeting participants reported that three demonstration providers had trouble enrolling subjects and only two providers are going forward. Each will serve 20,000 beneficiaries plus a comparison group. Participants will “receive health education and behavior change materials, and health coaching, provided on an ongoing basis using their preferred communication method, either through the mail, telephone, or internet. Participants will also have the option of having information shared directly with their physicians. In addition, participants will receive referrals to national and local programs, such as physical activity, falls prevention, smoking cessation, and other types of health promotion programs, or if needed, referrals to their physician for recommended clinical preventive services.” Program goals include improving health and reducing avoidable health care utilization. Somewhat overlapping, the

goals of chronic-illness care management are to prevent premature death and disability and improve quality of life (J Mold, Z. Nagykaldi).

Rubinstein et al. (2003) found that the Healthtrac Program (Fries and McShane, 1998) was the only tailoring of an HA intervention to the needs of participants at high risk for health problems. “Developed by James Fries, Stanford University, this program, based on self-efficacy theory, consists of completing health risk questionnaires at six-month intervals” for most individuals and at three-month intervals for high-risk individuals. “Computer-based serial personal health risk reports are provided after each administration, along with 86 individualized recommendation letters, newsletters, self-management and health promotion books, and other program materials. The instrument contains 14 modules on various health risks and major chronic diseases.... Although results indicated an 11% decline in health risk scores (from baseline) at a 6-month follow-up, this study did not include a control group of high-risk individuals who did not receive the full Healthtrac Program” (Rubinstein et al., 2003).

## Meeting Summary

Consistent with the scan results, the Panel said little research exists on HAs and chronic care. It is important to distinguish between disease management and care management (e.g., managing hypertension that leads to heart disease vs. managing the chronic illness). Many chronic diseases that clinicians spend the most time managing have the same risk factors prioritized in HAs. The HA should be integrated into chronic care management so the case manager can link people with the proper care and services.

Attendees discussed complex case management for people with very high risks. The HA is integrated into a system with a case manager and has follow-up efforts to ensure the person is connected to the proper care. However, as one participant pointed out, “we don’t know how to manage the seriously multi-disease patient” and that clinicians are unsure what preventive services to use and how to set priorities for these patients. External resources are needed to help manage the needs of chronically ill individuals and participants thought that while it would be helpful for HAs to prioritize care “the science is not there yet.”

Nico Pronk described his conceptual project that is looking at chronic conditions as preventable outcomes that fit into the HA process. It is looking at primary, secondary, and tertiary prevention to increase risk management.

## Conclusions

Minimal research has been conducted on HA strategies for patients with chronic illnesses. It is clearly an opportunity for further exploration, with the initial focus probably on identifying preventive service needs and priorities for multi-disease patients. Both the patients and their providers tend to be focused on immediate needs, so research also needs to focus on effective ways to promote a more preventive orientation.

The Medicare demonstrations warrant monitoring. It might be desirable to work with CMS to review the data elements being collected to ensure that information needed by AHRQ and the USPSTF will be included.



## **TOPIC 5: Strategies that might improve the delivery and coordination of clinical preventive services when HAs are used, regardless of setting**

### **Scan Summary**

The National Committee for Quality Assurance (NCQA) has worked on designing evaluation protocols for health-promotion vendors, and developing process and outcome measures regarding use of HA tools. NCQA is reviewing common industry practices and validated tools for workplace programs. The group is focusing on how to administer HAs, what to do about confidentiality, risk factors (e.g., BMI, smoking), motivational levels, HA completion rates, frequency of use and updates, and risk reduction (P. Renner).

In the clinical setting, both physicians and patients are being overwhelmed by possible interventions and recommendations. As Dr. Mold indicated, “We’ve gotten too good at it,” with many more detailed guidelines and improved identification and testing. In theory, HAs could help pare down the information overload.

Collectively, interview respondents suggested the following strategies:

- Study the cultural and work environment that drives HA response rate, participation, and completion.
- Scale back the number and depth of questions if the response burden is too great.
- Incorporate questions into HAs about use of an age-appropriate evidence-based list of the highest ranking preventive services and about preventive care (e.g., self-report on immunization).
- Traditional HAs looked mostly at functional objectives such as staying in one’s own home. A patient-centered focus on quality-of-life goals (e.g., who you are, what you want, life expectancy) seems desirable to add (J. Mold).

### **Meeting Summary**

The group discussed strategies to improve the delivery and coordination of preventive services, including the return of the worksite-based clinic for primary care. Participants viewed this as an opportunity to develop a model of coordinated care, with some “sorting out” of roles (e.g., the provider, the nurse). The health plan would be a key partner to gain access to the patient base.

Participants promoted the team approach to reduce the burden on clinicians. Also, developing and using CPT codes to reimburse HA administration and follow-up would greatly increase usage. Panel members suggested this might occur through a government initiative. Redesigning systems, a major challenge, is likely needed to accommodate new ways of communicating and providing services.

Participants are interested in assessing if patients receive appropriate care for their conditions. One of the keys to this is developing a personalized wellness plan and adhering to it. Self-care management would be an important component. And, a measure of quality should be built in. This is not yet a mature area, and needs more exploration.

Panel participants disagreed whether to limit HA questions to areas where there are evidence based interventions. Some believed that all risk factors are modifiable. And even if interventions were not totally effective, new ones might be developed. Others said that HAs limited to risks with proven interventions would result in more concise tools, an advantage with patients.

Panel members agreed that all parties are affected by financial concerns, and that this is perhaps the main reason for stakeholders to be at the table. One member said “It all comes back to money.” The bottom line for health care organizations as well as workplace settings is: What health outcomes are achieved for the dollar investment?

## Conclusions

The interviewees and the meeting participants were in substantial agreement on this topic conceptually, but the meeting attendees offered more input on strategies. They suspect major systems redesign is needed to achieve desired health outcomes and coordination of preventive care and follow-up services. Studying existing models would be very informative. Participants agreed that using a team approach could reduce the burden on the clinician. Self-care management also deserves exploration. All agreed that cultural and work environments need to be studied for their impact on HA response rates, use, and user accessibility.

The NCQA work on HA protocols and measures seems important to monitor and may warrant AHRQ participation. The panel participants and interviewees felt strongly that more evaluation of HA outcomes and cost-effectiveness would be informative

## TOPIC 6: What are the gaps in knowledge and evidence regarding the use of HAs and how do HAs affect the delivery of effective preventive and care management services?

### Scan Summary

Interview respondents identified five gaps and issues:

1. Better evidence is needed about HA use in primary care. What works in different practices? What do HA completion rates look like in different settings? How can linkage be accomplished effectively and efficiently? What are the key roles and who are the actors in a coordinated system of HAs and primary care follow-up?
2. More evidence-based research/randomized trials are needed (Grossman), especially ones that focus on how HAs affect primary care outcomes and cost of care? The trials should pay attention to the influence on outcomes of differences in the way a design is implemented (Goetzel).

3. Standardizing HAs requires better evidence about design. What is the optimal length of an HA? What is the most appropriate reading level? What are the critical items to ask on an age-appropriate HA (R. Soler)? How good are primary care EHRs compared to HAs (e.g., how do the questions on smoking compare) (Harmon)? For ethnic and other special populations, within the primary care setting, what considerations arise in designing, promoting, and using HAs? How can we best handle confidentiality concerns? And critically, if standardized HAs for primary care were developed, would physicians use them?
4. How frequently should HAs be repeated? Are data on outcomes valid if they are not longitudinal?

## Meeting Summary

Panel participants saw a need for research on ways to integrate HAs into systems of care and for evaluation of outcomes of HA integration. Like the interview respondents, they also focused on the mechanics of HA design and administration. The latter discussion overlaps with the discussion under Topic 2 on HA design and response rates in primary care.

### *System Integration and Evaluation*

A “best practices” review would be very informative. The first step is to study existing models – how they operate, what works, what does not, and how they have overcome obstacles. What system components facilitate effective HA use? How are data used to provide care and improve health? The review should explore the vendor/employer perspective and its effect on relationships with health care systems.

Studies also are needed on the economic and cost implications. One outcome should be cost savings, but this needs to include patient productivity and functional status,

Using a conceptual model for an ongoing demonstration rather than a time-defined project is desirable. Pairing a large HA vendor with an EHR vendor and a health system could measure many of these concepts. Collaborative research with other Federal partners such as CMS, DoD and VA seems desirable.

Research is needed on “patient activation” and “clinician activation” addressing patient response to different types of feedback, and “readiness to change” effects. Basic research on risk and risk reduction in specific demographic populations is needed, as is research on physician support from the community, especially for the highest risk patients.

Prioritization of HA follow-up is key, and should be based on the likely health impact of possible interventions. Integration of clinical and community prevention services should be a priority. Guidance is lacking on ways to expand services from the clinical office to the community. For example, the doctor’s office will not tackle the obesity epidemic. Within clinical preventive services, reasonable outcomes could be preventive services uptake and effects on disease management.

***HA Mechanics***

Participants echoed the interview discussion that cultural and work environments affect response rates of HAs. Studying this is critical to understanding how and how much these factors affect HA participation.

Participants discussed Health IT needs and HAs, including readability format and skip patterns, and interactive tools. The group agreed that technology should ease the way and improve communications, resulting in more patient-centered services. The HA tools must be user-friendly, and responsive to health and information technology literacy levels. Some attendees also mentioned the need for HA tailoring to specific populations (e.g., by ethnicity, gender, occupational groups).

**Conclusions**

Generally, the meeting seemed to focus more on broader systems-based research, while the scan/interviews brought up more detailed operational functions. The major research recommended included a best practices study; evaluation of linkages between clinicians and communities, including physician support from the community; HA effects on costs of care and patient functioning and productivity; HA design (e.g., length, reading level, population tailoring); and basic research on risk and risk reduction research targeted toward gender/ethnic specific populations and people with chronic conditions. IT around HAs also needs to advance and become more standardized.

## Summary of Conclusions and Recommendations

The environmental scan found that the literature on HAs is extensive, but only a thin subset assesses HA use in or its integration with primary or chronic care. The Expert Panel concurred with this assessment. This section summarizes key conclusions from the scan and suggests actions that AHRQ may wish to take to move this area forward.

### Priority Areas for Research

Although a survey found that one fifth of large medical groups and IPAs routinely used HAs in 2000, with findings typically reported to the primary care physician (Halpin et al., 2005), the panel was skeptical. They agreed that HA use is widespread in workplace and health plan settings, but felt the information very rarely reaches a primary care provider. Confidentiality and workload barriers can be substantial. Ongoing programs and randomized trials that incorporate strategies like informed consent or counseling to facilitate information transfer have not documented the yield from these strategies or the use that primary care physicians make of the HA information.

Wide variations in HA coverage, wording, and scoring also impose major barriers to efficient provider use of HA data. It is unrealistic to think a busy primary care provider would review patients' HA responses if those responses arrived in widely differing formats and inconsistent scoring. Thus, standardization is critical to integrating HAs into clinical care. Developing and demonstrating the effectiveness of practice guidelines or standards of care might help uptake and use.

It appears a more probing survey is needed of HA use in large practices. HA usage also should be assessed in smaller practices, and the content and format of HAs used in primary care should be probed. A study similar to that done by Eichler et al. (2007) in Austria is needed that details the services provided as a result of HA responses when HA results reach the primary care provider.

The literature clearly indicates that good outcomes are dependent on HA follow-up with appropriate preventive services and linkages between the primary care and community setting. . Physicians often lack both the time and the training needed to coordinate effective preventive health services. In large practices, specialist staff members may be available to coordinate or deliver preventive services. This is a larger challenge for smaller practices.

Publicly available guidelines are needed for physicians to follow regarding HA administration, ways to process or evaluate HA data, and follow-up steps to take with patients who have completed an HA. Creating an automated HA link to EHRs would facilitate HA integration into primary care and support inclusion of questions on care management services for people who have or are at high risk for chronic illnesses.

Two ongoing large Medicare preventive services demonstrations incorporate HAs. One has a strong component related to chronic care and is the first large-scale effort to use HAs in the care

of chronically ill patients. The evaluative and descriptive data elements being collected should be reviewed to ensure that information needed by AHRQ and the USPSTF will be included.

Ensuring that questions on HAs are related to age-appropriate, evidence-based clinical preventive services has the potential to increase their impact. More culturally appropriate HA instruments also might raise response rates. Groups such as the National Commission on Prevention Priorities have developed evidence-based rankings of clinical preventive services that make the biggest impact on health and are most cost effective. Including questions on HAs related to these services could help clinicians prioritize their resources and ensure the patient is receiving appropriate care.

## Recommendations to AHRQ

Actions that AHRQ may wish to consider to promote HA use in primary care include:

- Research current practices. Priorities include a Best Practices study of existing models that integrate HA use into primary care settings, an analysis of differences in content and format of HAs currently used in primary care settings, and data on use of HAs in smaller medical practices.
- Study Health IT and its role in HA use. Analyze how the Medical Home and the EHR can help standardize and promote HA integration into primary care, including transfer of HA data.
- Collaborate with partners such as CMS, DoD, the VA, or the private sector to demonstrate the value of linking HAs into primary care and explore the cost-effectiveness of that approach.
- Monitor or participate in NCQA's work aimed at standardizing HA protocols and measures. It is impractical to use HA data in primary care unless providers receive consistent data across patients that cover the same topics, use the same questions, and generate comparable risk scores based on a methodology accessible to the provider. A forward-looking alternative to fully standardizing HAs that deserves deliberation is to standardize the subset of HA information that flows into the electronic medical record.
- Research and disseminate HA best-practice guidelines or standards of care specifically for primary care physicians and take other steps to increase the demographic tailoring, uniformity, and appropriateness of HA content areas, question wording, and scoring. Deciding on what domains of health risk the HA should cover, whether risk scoring is desirable, and the basic form of the risk scores seem appropriate questions for an expert panel.

## Appendix: Literature Cited and Reviewed

### Literature Cited

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